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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------|-----------------------|
| 10/644,598 | 08/20/2003 | Anh N. Nguyen | AMAT/7874/CPI/ALD/PJS | 5564 |
| 7590 | 03/23/2006 | | EXAMINER | LEE, KEVIN L |
| PATENT COUNSEL APPLIED MATERIALS, INC. Legal Affairs Department P.O. Box 450A Santa Clara, CA 95052 | | | | ART UNIT PAPER NUMBER |
| | | | | 3753 |
| DATE MAILED: 03/23/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/644,598 | NGUYEN ET AL. | |
| | Examiner | Art Unit | |
| | KEVIN L. LEE | 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on January 3, 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-12, 15-37, 40 and 41 is/are rejected.
- 7) Claim(s) 13, 14, 38 and 39 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Amendment

Applicant's amendment filed January 3, 2006 has been thoroughly reviewed and considered by the examiner. In view of applicant's amendments and persuasive arguments, the prior rejections as set forth in the Office action mailed September 29, 2005 are hereby withdrawn. In addition, in view of applicant's persuasive argument, the drawing objection requiring that the solenoid be illustrated to be attached to the piston is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 15-37, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ku et al (U.S. Patent Application Pub. 2004/0011404) in view of Ohmi et al (U.S. Patent No. 6,193,212). The patent publication to Ku et al discloses a diaphragm assembly (130) including a diaphragm (134) and a valve body having a purge inlet (114), a reactant inlet (112) and an outlet (116); see paragraph 0026. Ku et al discloses that the diaphragm assembly may be actuated by a solenoid valve (152); see paragraph 0028. The details of the solenoid valve are not disclosed. The '212 patent to Ohmi et al teaches an electronically controlled valve comprising a solenoid coil

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(102), a magnetic member (104), a piston (109) and a diaphragm (111). The valve includes a computer-controlled drive for energizing the solenoid and includes a diaphragm position indicator (31); see col. 14, lines 42-65. In view of the teaching of Ohmi et al, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the solenoid valve structure disclosed by Ohmi to drive the diaphragm assembly of Ku et al. In particular regards to claims 7, 15 and 26, it would have been an obvious reversal of parts to have the solenoid of the solenoid valve of Ohmi et al fixed to the piston or to have the stroke length of the piston set at an optimum 0.2 mm.

Allowable Subject Matter

Claims 13, 14, 38 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent to Hunkapiller (U.S. Patent No. 4,558,845) is cited for the additional showing of a diaphragm valve assembly having two inlets and an outlet, col. 4, lines 15-19.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN L. LEE whose telephone number is (571) 272-4915. The examiner can normally be reached on MONDAY-THURSDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ERIC KEASEL can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MARCH 20, 2006


Kevin Lee
Primary Examiner